

**REMARKS**

This Amendment is filed in response to the Final Office Action mailed on April 6, 2007. All objections and rejections are respectfully traversed.

Claims 1-2, 4-11, 13-20 and 22-35 are in the case.

Claims 1, 2, 7, 11, 24, and 28 are amended but do not add new matter to the claims.

**Claim Rejections – 35 USC § 103**

At paragraph 3 of the Office Action, claims 1-2, 4-11, 13-20, 22-24, 28, and 32 were rejected under 35 U.S.C. §103 as being unpatentable over “A highly Available Network File Server”, Bhide et al., hereinafter Bhide, in view of Chen et al., U.S. Patent No. 6,715,098, hereinafter Chen.

The present invention, as set forth in representative claim 1, comprises in part:

1. A method for a coordinated bringup of a repaired storage appliance in a storage appliance cluster, the repaired storage appliance having a disk subsystem, comprising:

*asserting a first state in memory of the repaired storage appliance, the first state indicating that the repaired storage appliance awaits release of disk reservations of the disk subsystem by a surviving storage appliance;*

releasing the disk reservations in response to detection of the asserted first state by the surviving storage appliance;

initializing the disk subsystem of the repaired storage appliance;  
*asserting a second state in memory of the repaired storage appliance, the second state indicating that the repaired storage appliance has initialized the disk subsystem;* and

performing a giveback operation by the surviving storage appliance in response to detecting the second state.

By way of background, Bhide discloses a highly available network file server that uses two servers connected to two disks that are dual-ported. After a failure occurs by a first server, the second server takes over the disks and IP address of the first server. During re-integration of the first server, the first server is booted up using its secondary interface to send a reintegration request to the second server. The second server acknowledges receipt of the reintegration request, and the second server unmounts corresponding file systems and switches the IP address of the second interface on the second server to normal settings. The second server then sends a message to the first server allowing it to proceed. The first server then reclaims its SCSI buses and disks, and switches its own primary interface on.

Chen discloses a backup appliance for a primary appliance whereby both the primary and backup are connected together through a heartbeat connection and each connected to the storage device. When the backup server does not receive a heartbeat message from the primary, the backup appliance writes an instruction in a reserved disk sector that instructs the primary appliance to shut down. The primary appliance writes acknowledgement message in the reserved data sector completes remaining tasks. Then the primary appliance writes a shutdown completion message in the reserved disk sector. Then the backup appliance uses the world wide port name of the primary appliance and processes requests to the storage device.

Applicant respectfully urges that Bhide and Chen, taken alone or in combination, do not teach nor suggest Applicant's claimed novel *asserting a first state in memory of the repaired storage appliance, the first state indicating that the repaired storage appliance awaits release of disk reservations of the disk subsystem by a surviving storage appliance ... asserting a second state in memory of the repaired storage appliance, the second state indicating that the repaired storage appliance has initialized the disk subsystem.* In further detail, in Applicant's claimed invention, the first state is written to the memory within the repaired storage appliance. The surviving storage appliance periodi-

cally reads the memory of the repaired storage appliance to check for a data structure with the first state, which indicates that the repaired storage appliance awaits the release of disk reservation held by the surviving storage appliance. The surviving storage appliance then releases the reservations and the repaired storage appliance initializes the disk subsystem. Afterward, the repaired storage appliance writes a second state in memory of the repaired storage appliance that indicates the repaired storage appliance has initialized the disk subsystem. The surviving storage appliance reads the memory of the repaired storage appliance for the second state, and in response to detecting the second state, the surviving storage appliance performs a giveback operation.

In contrast neither Bhide nor Chen disclose nor suggest storing states (instructions) in memory of the repaired storage appliance for the surviving storage appliance to read and respond to, as claimed by Applicant. Chen merely discloses writing shutdown message by the backup appliance to a reserved disk sector on the storage device connected to both the primary appliance and the storage appliance. There is no suggestion in Chen of reading memory within the primary appliance for directions. Chen merely discloses reading and writing to a common disk. Furthermore, Bhide merely teaches of sending messages over the network between the repaired and surviving servers. There is no disclosure or suggestion in Bhide of storing the messages in memory of the repaired storage appliance, and reading messages (states in a data structure) in memory of the repaired storage appliance.

Accordingly, Applicant respectfully urges that Bhide and Chen, taken alone or in combination, are legally insufficient to make obvious the presently claimed invention under 35 U.S.C. § 103 because of the absence of the Applicant's claimed novel *asserting a first state in memory of the repaired storage appliance, the first state indicating that the repaired storage appliance awaits release of disk reservations of the disk subsystem by a surviving storage appliance ... asserting a second state in memory of the repaired storage appliance, the second state indicating that the repaired storage appliance has initialized the disk subsystem.*

At paragraph 20 of the Office Action, claims 25-27, 29-31, and 33-35 were rejected under 35 U.S.C. §103 as being unpatentable over Bhide, in view of Chen, and in further view of Wikipedia's Data Structure Article.

Applicant respectfully notes that claims 25-27, 29-31, and 33-35 are dependent claims that depend from independent claims that are believed to be in condition for allowance. Accordingly, claims 25-27, 29-31, and 33-35 are believed to be in condition for allowance.

All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims.

Applicant respectfully solicits favorable action.

In the event that the Examiner deems personal contact desirable in disposition of this case, the Examiner is encouraged to call the undersigned attorney at (617) 951-3067.

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